Grade 1
Mathematics
Item Specifications

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Introduction

In 2014 Missouri legislators passed House Bill 1490, mandating the development of the Missouri Learning Expectations. In April of 2016, these Missouri Learning Expectations were adopted by the State Board of Education. Groups of Missouri educators from across the state collaborated to create the documents necessary to support the implementation of these expectations.

One of the documents developed is the item specification document, which includes all Missouri grade level/course expectations arranged by domains/strands. It defines what could be measured on a variety of assessments. The document serves as the foundation of the assessment development process.

Although teachers may use this document to provide clarity to the expectations, these specifications are intended for summative, benchmark, and large-scale assessment purposes.

Components of the item specifications include:

Expectation Unwrapped breaks down a list of clearly delineated content and skills the students are expected to know and be able to do upon mastery of the Expectation.

Depth of Knowledge (DOK) Ceiling indicates the highest level of cognitive complexity that would typically be assessed on a large scale assessment. The DOK ceiling is not intended to limit the complexity one might reach in classroom instruction.

Item Format indicates the types of items used in large scale assessment. For each expectation, the item format specifies the type best suited for that particular expectation.

Text Types suggests a broad list of text types for both literary and informational expectations. This list is not intended to be all inclusive: other text types may be used in the classroom setting. The expectations were written in grade level bands; for this reason, the progression of the expectations relies upon increasing levels of quantitative and qualitative text complexities.

Grade 1 Mathematics

Content Limits/Assessment Boundaries are parameters that item writers should consider when developing a large scale assessment. For example, some expectations should not be assessed on a large scale assessment but are better suited for local assessment.

Sample stems are examples that address the specific elements of each expectation and address varying DOK levels. The sample stems provided in this document are in no way intended to limit the depth and breadth of possible item stems. The expectation should be assessed in a variety of ways.

Grade 1 Mathematics

Frequently asked questions for Item Specification and Sample Stems

1. What is the purpose of the Item Specification document?
Historically, Item Specification documents are written for test item writers. In Missouri, this document was seen as a resource for not only item writers, but teachers as well. The unwrapped section should provide more detail on the meaning of the standard and the sample stems should provide example items that also help clarify the standard. In this update, the language used in the Expanded Expectations document was included to merge the two documents for easier access. In some standards a "Notes" section was added to provide additional information.

2. Why do some unwrapped sections have the same few sentences at the beginning?
For standards that have multiple parts and are listed as sub expectations, e.g., NF.C.5.b, the first part highlights the intent of that standard series. Often, these standards should be taught together as they develop a bigger idea or concept.

3. Why is the Fluency definition only on some standards?
Certainly, students having experience using different strategies and picking the strategy they feel best for given situations is important to improving student knowledge in mathematics. The Missouri Educators working on the document felt it important to highlight areas where student access to multiple strategies would provide the greatest support. Listing fluency in all standards would likely lessen the impact needed.

4. What does the "e.g." mean when listed in the unwrapped section?
The "e.g." is a way to highlight a list of examples, ideas, or concepts. It is **not** an exhaustive list, nor is it intended to represent the best examples. It is merely a partial list to provide some examples.

5. What does "with or without context" mean?
This phrase was used to highlight that the math problems might have some situational context or could possibly be a strictly number or symbol situation. The Educators working on this update wanted the focus to be on using math to solve problem situations rather than a focus on "real world" problems.

6. Are the Sample Stems examples of summative test items?
The Sample Stems could be a classroom item or possibly an assessment item. In some cases, the problem used would have to be adjusted to use on a Statewide assessment. The goal was to give students and teachers a problem that aligns to the standard. The Stems provided in the document are an example. The educators assisting with the update in some cases created more than one example and those are listed at the bottom of the document. All examples are good, some fit better on the page within the Item Specification which have determined those shown in both places.

7. Why are there no answers listed with the Sample Stems?
The focus of the Sample Stems should be on the work students can demonstrate to indicate their level of understanding for the given standard. While the answer is one component, when given, it frequently becomes the focus which does not provide important information in the learning process.

8. What does "No Limits" mean in the Limits and Boundaries section?
Where there are no limits or boundaries to be listed, "No Limits" was used to indicate this situation and help those using the document understand that it wasn't an oversight. IMPORTANT NOTE: if the standard itself or the cluster heading lists a specific limit, e.g., specific denominators, size or type of number, that was not duplicated in the Limits section.

9. Why do some words show a short definition?
While this does not serve as a replacement for a glossary, there were terms within the unwrapping that the committee felt should have meaning included. This occurs in the standard where it specifically addresses the concept in the standard, e.g., cardinality, trapezoid.

10. Why are Kindergarten and Grade 1 Sample Stems a bit different?
Students in Kindergarten and Grade 1 are beginning readers, so teachers should expect to read problems to the students rather than only providing problems to be solved.

Grade 1 Mathematics

Mathematics		1.NS.A.1
NS **A** **1**	**Number Sense** **Understand and use numbers up to 120.** Count to 120, starting at any number less than 120.	
Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations. The student will count verbally to 120, starting at any number less than 120. The focus here should be on transitions between multiples of ten, e.g., 38, 39, 40, … or 68, 69, 70, … Note: The focus of this expectation is verbal counting.		**Sample Stems** Start at 27 and count until I ask you to stop. Additional Stems for 1st Grade Found at End of Document.
Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits No Limits.		**Calculator Designation** **NO** – a calculator will not be available for items
DOK Ceiling: 2		
Item Format: Selected Response, Constructed Response, Technology Enhanced		

Grade 1 Mathematics

Mathematics		1.NS.A.2
NS A 2	**Number Sense** **Understand and use numbers up to 120.** Read and write numerals and represent a number of objects with a written numeral.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.	**Sample Stems**
The student will read and write numerals. This should include identifying numerals in and out of sequence. The student will represent a number of objects with a written numeral up to 120. Note: Numeral refers to the written symbol used to name a number. Number is a mathematical idea concerning the amount contained in a set (cardinality).	Place several items on a tray or table. Have students count the items, and then write the numeral represented. Additional Stems for 1st Grade Found at End of Document.
Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits No Limit.	**Calculator Designation** **NO** – a calculator will not be available for items
DOK Ceiling: 2	
Item Format: Selected Response, Constructed Response, Technology Enhanced	

Grade 1 Mathematics

Mathematics		1.NS.A.3
NS **A** **3**	**Number Sense** **Understand and use numbers up to 120.** Count backward from a given number between 20 and 1.	
Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations. The student will verbally count backward from a given number between 20 and 1, e.g., 13, 12, 11, 10, …, 1. Note: Use of tools, e.g., hundreds chart, could be used as students develop this concept with the end of year goal to be counting backwards with or without a tool.		**Sample Stems** Hold up a number card (numeral identification) or say, "Start at 16 and count back until I say stop." Additional Stems for 1st Grade Found at End of Document.
Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits No Limit.		**Calculator Designation** **NO** – a calculator will not be available for items
DOK Ceiling: 2		
Item Format: Selected Response, Constructed Response, Technology Enhanced		

Grade 1 Mathematics

Mathematics		1.NS.A.4
NS **A** **4**	**Number Sense** **Understand and use numbers up to 120.** Count by 5s to 100 starting at any multiple of five.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will verbally count by 5s to 100 starting at any multiple of five, e.g., 30, 35, 40, …, 100.

Note:
Use of tools, e.g., hundreds chart, could be used as students develop this concept with the end of year goal to be counting with or without a tool.

Sample Stems

Have students sit in a circle. Ask one child to start counting. Continue counting around the circle by 5s until children reach the desired stopping place. "Start at 15 and count to 70."

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

No Limit.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 2

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.NBT.A.1
NBT **A** **1**	**Number Sense and Operations in Base Ten** **Understand place value of two-digit numbers.** Understand that 10 can be thought of as a bundle of 10 ones – called a "ten".	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will understand that 10 ones can be bundled (grouped) into a unit called a "ten".

Note:
Use of tools and visual representations, e.g., unit blocks, connecting cubes, ten frames, number racks, could be used as students develop this concept.

Sample Stems

What is another name for a bundle of 10 ones?

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

No Limit.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 2

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.NBT.A.2
NBT A 2	**Number Sense and Operations in Base Ten** **Understand place value of two-digit numbers.** Understand two-digit numbers are composed of ten (s) and ones (s).	**PRIORITY STANDARD**

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.	**Sample Stems**
The student will understand that two-digit numbers are composed of ten(s) and one(s), e.g., 35 can be composed of 3 tens and 5 ones, as well as 2 tens and 15 ones. Note: Use of tools and visual representations, e.g., unit blocks, connecting cubes, ten frames, number racks, could be used as students develop this concept.	James says that 54 is made of 5 tens and 4 ones. Matt says it is made of 4 tens and 14 ones. Shawn says they are both correct. Who do you agree with? Explain your thinking. Additional Stems for 1st Grade Found at End of Document.
Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits No Limit.	**Calculator Designation** **NO** – a calculator will not be available for items
DOK Ceiling: 3	
Item Format: Selected Response, Constructed Response, Technology Enhanced	

Grade 1 Mathematics

Mathematics		1.NBT.A.3
NBT A 3	**Number Sense and Operations in Base Ten** **Understand place value of two-digit numbers.** Compare two two-digit numbers using the symbols >, = or <.	**PRIORITY STANDARD**

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will compare two two-digit numbers based on the meaning of the tens and ones digits and record the results of the comparison with the appropriate symbol >, =, or <, e.g., 21 > 12.

The student will explain their comparison, e.g., using number lines, manipulatives, models, then communicate the results of the comparison using the symbols <, >, or =.

Mathematical Fluency is more than a quick answer on some timed test. Students demonstrate Fluency when they do mathematics using an ***appropriate strategy*** in a reasonable amount of time, ***knowing multiple processes*** and can apply or adapt strategies to find a correct solution.

The student will use and explain multiple strategies to solve problems with or without context involving comparing two two-digits numbers.

Sample Stems

Harmony says that 54 and 45 are equal because they are both made with a 5 and 4. Do you agree with her? Why or why not?

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

No Limit.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 3

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.NBT.A.4
NBT **A** **4**	**Number Sense and Operations in Base Ten** **Understand place value of two-digit numbers.** Count by 10s to 120 starting at any number.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will verbally count by 10s within 120 starting at any number, e.g., 43, 53, 63, 73.

Note:
Use of tools, e.g., hundred and twenty chart, could be used as students develop this concept with the end of year goal to be counting with or without a tool.

Sample Stems

Start counting from 13 and count by tens to 93.

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

No Limit.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 2

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.NBT.B.5
NBT **B** **5**	**Number Sense and Operations in Base Ten** **Use place value understanding to add and subtract** Add within 100.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will add within 100, (including adding a two-digit number and a one-digit number, adding a two-digit number and a multiple of 10 as well as adding two two-digit numbers). As an example, 17 + 6, students should be able to use multiple strategies to represent 2 tens and 3 ones, e.g., counting on, composing, or decomposing one of the numbers to make an easy ten.

The student will support answers using words, numbers, or models, e.g., number paths, number lines, concrete models, drawings, ten frames, to convey strategies connected to place value understanding.

Mathematical Fluency is more than a quick answer on a timed test. Students demonstrate Fluency when they do mathematics using an ***appropriate strategy*** in a reasonable amount of time, ***knowing multiple processes*** and can apply or adapt strategies to find a correct solution.

The student will use and explain multiple strategies to solve problems with or without context involving adding numbers within 100.

Sample Stems

Can you find a way to add 34 and 18?

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

No Limits.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 3

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.NBT.B.6
NBT **B** **6**	**Number Sense and Operations in Base Ten** **Use place value understanding to add and subtract** Calculate 10 more or 10 less than a given number mentally without having to count.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will calculate 10 more or 10 less than a given number mentally without having to count. This includes using a two-digit number to mentally find 10 more or 10 less than the number, without having to count, e.g., 10 more than 23 is 33 and 10 less than 66 is 56.

The student will support answers using words, numbers, or models, e.g., number paths, number lines, concrete models, drawings, ten frames, to convey strategies connected to place value understanding.

Note:
For this standard, students are calculating within 100.

Sample Stems

What is 10 more than 43? What is 10 less than 78? Can you do this without counting?

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

No Limits.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 2

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.NBT.B.7
NBT **B** **7**	**Number Sense and Operations in Base Ten** **Use place value understanding to add and subtract** Add or subtract a multiple of 10 from another two-digit number, and justify the solution.	**PRIORITY STANDARD**

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.	**Sample Stems**
The student will add a multiple of 10 to, or subtract a multiple of 10 from, another two-digit number. The student will support (justify) answers using words, numbers, or models, e.g., number paths, number lines, concrete models, drawings, ten frames, to convey strategies connected to place value understanding. Note: For this standard, students are calculating within 100.	How can you add 37 + 40 using models, drawings, or manipulatives? Additional Stems for 1st Grade Found at End of Document.
Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits No Limits.	**Calculator Designation** **NO** – a calculator will not be available for items
DOK Ceiling: 3	
Item Format: Selected Response, Constructed Response, Technology Enhanced	

Grade 1 Mathematics

Mathematics		1.RA.A.1
RA **A** **1**	**Relationships and Algebraic Thinking** **Represent and solve problems involving addition and subtraction** Use addition and subtraction within 20 to solve problems.	**PRIORITY STANDARD**

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will use addition and subtraction using numbers less than or equal to 20 to represent and solve problems with and without context involving situations of adding to, taking from, putting together, taking apart and comparing, **with unknowns in all positions**.

For this expectation, to represent includes solving the problem by using models, e.g., manipulatives, drawings, and number sentences, acting out the problem or strategies, e.g., composing and decomposing numbers.

Mathematical Fluency is more than a quick answer on some timed test. Students demonstrate Fluency when they do mathematics using an ***appropriate strategy*** in a reasonable amount of time, ***knowing multiple processes*** and can apply or adapt strategies to find a correct solution.

The student will use and explain multiple strategies to solve problems with or without context involving adding and subtracting within 20.

Sample Stems

Tia is solving the equation 19 – 11 = ?. She says her strategy is to think about the problem and change it to 19 – 10 which equals 9, and then she takes one more away to get an answer of 8.

What different strategy would you use to find 19 – 11 =

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

No Limits.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 3

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.RA.A.2
RA **A** **2**	**Relationships and Algebraic Thinking** **Represent and solve problems involving addition and subtraction** Solve problems that call for addition of three whole numbers whose sum is within 20.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will represent and solve problems with and without context that call for addition of three whole numbers whose sum is less than or equal to 20, using a symbol for the unknown number. Symbols used to show an unknown number or operation include a □, ◯, ? ,e.g., 4 + 6 + □ = 17, ◯ + 6 + 7 = 17, 4 + 10 + ? = 17.

For this expectation, to represent includes solving the problem by using models (strategies) such as acting out the problem, manipulatives, drawings, and number sentences.

Sample Stems

There were 6 goldfish in the tank. Three red fish came out of the rock cave. Five blue fish were hiding in the plant. How many fish were in the tank?

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

No Limit.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 3

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.RA.A.3
RA A 3	**Relationships and Algebraic Thinking** **Represent and solve problems involving addition and subtraction** Develop the meaning of the equal sign and determine if equations involving addition and subtraction are true or false.	**PRIORITY STANDARD**

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will develop an understanding (meaning) of the equal sign as a symbol representing that the quantities on both sides are equivalent or the same, e.g., 10 = 6 + 4 can be read as "10 is the same as 6 and 4".

The student will determine if equations involving addition and subtraction are true or false.

Mathematical Fluency is more than a quick answer on some timed test. Students demonstrate Fluency when they do mathematics using an ***appropriate strategy*** in a reasonable amount of time, ***knowing multiple processes*** and can apply or adapt strategies to find a correct solution.

The student will use and explain how the equal sign, no matter its placement, indicates that the values on each side must in fact be equal when solving problems with or without context.

Sample Stems

Which equation(s) are true and which equation(s) are false?

6 = 6
4 + 1 = 5 + 2
7 = 8 – 1
5 + 2 = 2 + 5
7 + 2 = 9

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

Limit sums and minuends to be 20 or less.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 3

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.RA.A.4
RA **A** **4**	**Relationships and Algebraic Thinking** **Represent and solve problems involving addition and subtraction** Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will determine the unknown whole number in an addition or subtraction equation relating three whole numbers. The three whole numbers can be represented as two numbers being added or subtracted and the third number is the solution and any of the three could be the unknown, e.g., determine the unknown number that makes each equation true: 8 + ☐ = 11 ; ◯ = 5 - 3 ; 6 + 6 = ___ ; 9 = 10 - ?.

Sample Stems

14 - ☐ = 9

7 + ☐ = 11

13 - 4 = ☐

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

Limit sums and minuends to be 20 or less.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 3

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.RA.B.5
RA B 5	**Relationships and Algebraic Thinking** **Understand and apply properties of operations and the relationship between addition and subtraction.** Use properties as strategies to add and subtract.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will use properties as strategies to add and subtract.

The student should discuss how and why the results are the same, and begin to generalize these patterns. A student could apply their understanding of commutative property when solving 3 + 8 by counting on from 8 (adding 3 more). The focus of this standard is to use the properties as strategies in solving problems.

At grade one, properties include: **Commutative Property of Addition,** e.g., both 8 + 3 and 3 + 8 equal 11;
Associative Property of Addition, e.g., 2 + 6 + 4 adding the first two numbers could be represented as 8 + 4 = 12, or the second two numbers can be added and be represented by 2 + 10 = 12; **Identity Property of Addition/Subtraction**, e.g., 7+0=7, 8-0=8.

Note:
The student should not be expected to use the formal names for these properties; however, the teacher should use the correct mathematical vocabulary in class.

Mathematical Fluency is more than a quick answer on some timed test. Students demonstrate Fluency when they do mathematics using an ***appropriate strategy*** in a reasonable amount of time, ***knowing multiple processes*** and can apply or adapt strategies to find a correct solution.

The student will use and explain multiple strategies to solve problems with or without context involving using properties as strategies.

Sample Stems

When adding 3 + 5 + 7, Nevaeh added 3 + 7 first to make 10, then added 5 more. Jose said you have to add the numbers in order, so he did 3 + 5 equals 8, plus 7 more to get 13. Who is correct? Which way would you add the 3 numbers?

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

Limit sums and minuends to be 20 or less.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 3

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.RA.B.6
RA	**Relationships and Algebraic Thinking**	
B	**Understand and apply properties of operations and the relationship between addition and subtraction.**	
6	Demonstrate that subtraction can be solved as an unknown-addend problem.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will demonstrate that subtraction can be solved as an unknown-addend problem, e.g., solving 10 – 7 by finding the number that makes 10 when added to 7. The relationship between addition and subtraction could be represented using a number bond, fact family, part-part-total, or part-part-whole.

Sample Stems

List the patterns you see in the following pairs of equations.

10+7=17	17-10=7
8+5=13	13-5=8
6+9=15	15-9=6
8 +3=11	11-8=3

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

Limit minuend to be 20 or less.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 2

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.RA.C.7
RA **C** **7**	**Relationships and Algebraic Thinking** **Add and subtract within 20** Add and subtract within 20.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will add and subtract within 20 using a variety of student selected strategies. These strategies could include: **counting on**, **making ten,** e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14, **decomposing a number leading to a ten,** e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9, **using the relationship between addition and subtraction,** e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4, **deriving a new fact from a known fact,** e.g., 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13.

This expectation supports building fluency, at grade 1 students should be expected to be fluent within 10, but working with problems within 20.

Sample Stems

Find two numbers to make a sum of 14. Find two numbers to make a difference of 6.

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

No Limits.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 3

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.RA.C.8
RA **C** **8**	**Relationships and Algebraic Thinking** **Add and subtract within 20** Demonstrate fluency with addition and subtraction within 10.	**PRIORITY STANDARD**

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will demonstrate fluency with sums and differences within ten using strategies such as: counting on, doubles, deriving a new fact from a known fact, e.g., 4 + 5 by creating the known equivalent 4 + 4 + 1 = 8 + 1 = 9, properties of operations (commutative, associative, identity), or other mental strategies.

Mathematical Fluency is more than a quick answer on some timed test. Students demonstrate Fluency when they do mathematics using an ***appropriate strategy*** in a reasonable amount of time, ***knowing multiple processes*** and can apply or adapt strategies to find a correct solution.

The student will use and explain multiple strategies to solve problems with or without context involving adding and subtracting within 10.

Sample Stems

In pairs, you will each draw two cards from your stack. The person with the highest sum wins that round and gets all 4 cards. Continue to play until one person has the whole stack.

Teacher action: provide each student with a set of numeral cards with each student beginning with the same number of cards. Have each student place their cards in a pile, face-down in front of them.

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

No Limits.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 3

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.GM.A.1
GM A 1	**Geometry and Measurement** **PRIORITY STANDARD** **Reason with shapes and their attributes.** Distinguish between defining attributes versus non-defining attributes; build and draw shapes that possess defining attributes.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will distinguish between defining attributes, e.g., triangles are closed and three-sided, versus non-defining attributes, e.g., color, orientation, overall size.

The student will build and draw two-dimensional shapes that possess defining attributes.

Note:
In grade 1 the two-dimensional shapes include: triangle, trapezoid, rectangle, square, rhombus (avoid non-mathematical term of diamond), hexagon, circle.

The focus on this expectation is to develop student understanding of two-dimensional shapes to support later work with three-dimensional shapes.

Sample Stems

If we took away one side on the rectangle shown below, could we still call it a rectangle? Why or why not?

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

No Limits.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 3

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.GM.A.2
GM A 2	**Geometry and Measurement** **PRIORITY STANDARD** **Reason with shapes and their attributes.** Compose and decompose two- and three-dimensional shapes to build an understanding of part-whole relationships and the properties of the original and composite shapes.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will compose shapes like rectangles (including squares which are special rectangles), trapezoids, triangles, half-circles and quarter-circles into larger polygons and circles. Students will also decompose the larger shapes into smaller polygons, half-circles, and quarter-circles.

The focus of this standard is for students to develop an understanding of how the two-dimensional shapes compose together to describe the faces of three-dimensional shapes, e.g., rectangular prisms and triangular prisms. First grade students explore cones and cylinders; however, composing and decomposing these shapes is not a focus.

The focus of this work in first grade is to build an understanding of part-whole relationships, and to reinforce and describe/identify the properties of the original and composite shapes. This would include students looking at a larger shape (even non-typical shapes) to decide what shapes they would need to compose or decompose that shape, e.g., using tangrams to make shapes.

In first grade it is normal and acceptable for students to refer to corners or other vocabulary to describe parts of the two and three-dimensional shapes, but teachers should share the correct mathematical language of angles, vertices, or vertex points. Students should not be expected to use or recognize the formal names for the parts although teachers should use formal names in instruction.

Sample Stems

Using pattern blocks, which shape, or shapes could you use to make a whole hexagon? How many ways can you make a hexagon?

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

No Limits.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 3

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Mathematics		1.GM.A.3
GM A 3	**Geometry and Measurement** **Reason with shapes and their attributes.** Recognize two- and three-dimensional shapes from different perspectives and orientations.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.	**Sample Stems**
The student will recognize two- and three-dimensional shapes from different perspectives and orientations, e.g., recognize a triangle regardless of position, orientation, size, or color. Two-dimensional shapes should include: rectangles (including squares which are special rectangles), trapezoids, triangles, half-circles, and quarter-circles. Three-dimensional shapes should include rectangular prisms, triangular prisms, cones, and cylinders.	Follow your teacher on a shape walk. Observe an identified shape from multiple perspectives, e.g., lying under it, moving around it. Draw what you see from various perspectives. Additional Stems for 1st Grade Found at End of Document.
Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits No Limits.	**Calculator Designation** **NO** – a calculator will not be available for items
DOK Ceiling: 3	
Item Format: Selected Response, Constructed Response, Technology Enhanced	

Grade 1 Mathematics

Mathematics		1.GM.A.4
GM A 4	**Geometry and Measurement** **Reason with shapes and their attributes.** Partition circles and rectangles into two or four equal shares, and describe the shares and the wholes verbally.	**PRIORITY STANDARD**

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.	**Sample Stems**
The student will partition circles and rectangles into two and four equal shares (parts). When the same whole is partitioned into more shares, the shares get smaller. This is a critical component of developing fractional understanding. The student will use the words halves, fourths and quarters and use the phrases half of, fourth of, and quarter of to describe the equal shares (parts) of the whole. The focus should be on the language rather than fractional notation, e.g., half not $\frac{1}{2}$. The student will describe the whole as 2 halves or 4 fourths.	Using the modeling clay, create a pizza or cookie shape. With a craft stick, "cut" the shape in half. Notice how their halves appear. Are the pieces basically equal? Describe how you believe they are equal. Other possible actions and questions might include: cut shape into fourths. What is something important to remember when you determine half? Why should the pieces be as equal as possible? How can they check their sizes? (Lay one half on top of the other to compare.) Additional Stems for 1st Grade Found at End of Document.
Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits No Limits.	**Calculator Designation** **NO** – a calculator will not be available for items
DOK Ceiling: 3	
Item Format: Selected Response, Constructed Response, Technology Enhanced	

Grade 1 Mathematics

Mathematics		1.GM.B.5
GM **B** **5**	**Geometry and Measurement** **Measure lengths in non-standard units** Order three or more objects by length.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.	**Sample Stems**
The student will order three or more objects by length, e.g., heights of three students, lengths of pencils, etc. The student will describe the order using terms, e.g., short, shorter, shortest; long, longer, longest; tall, taller, tallest; same as, equal to. Note: Support student concept of length as a measurement in one direction, e.g., width of a desktop, height of a student.	Using the three items provided by your teacher, arrange them in order from shortest to longest. How did you decide which was shortest? Take the longest item and find two other items to compare. What strategy did you use to decide which item was shortest and which was longest? If the items fit, sketch them on a sheet of paper. Additional Stems for 1st Grade Found at End of Document.
Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits No Limits.	**Calculator Designation** **NO** – a calculator will not be available for items
DOK Ceiling: 3	
Item Format: Selected Response, Constructed Response, Technology Enhanced	

Grade 1 Mathematics

Mathematics		1.GM.B.6
GM **B** **6**	**Geometry and Measurement** **Measure lengths in non-standard units** Compare the lengths of two objects indirectly by using a third object.	**PRIORITY STANDARD**

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.	**Sample Stems**
The student will compare the lengths of two objects indirectly by using a third object, e.g., determine if a door is wider than a window using a student's arm span. The student will compare the lengths using terms, e.g., shorter, longer, taller, same as, equal to.	With a partner, use a paperclip to compare who has the longer pencil. Who has the shorter pencil? Additional Stems for 1st Grade Found at End of Document.
Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits No Limits.	**Calculator Designation** **NO** – a calculator will not be available for items
DOK Ceiling: 3	
Item Format: Selected Response, Constructed Response, Technology Enhanced	

Grade 1 Mathematics

Mathematics		1.GM.B.7
GM **B** **7**	**Geometry and Measurement** **Measure lengths in non-standard units** Demonstrate the ability to measure length or distance using objects.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.	**Sample Stems**
The student will measure length or distance using objects as non-standard units of measurement, e.g., express the length of a desk as the number of whole paper clips laid end to end with no gaps or overlaps. Non-standard units refer to objects outside of the customary units of measurement, e.g., paperclips, cubes, etc.	Working in partners, how many cubes long (tall) is each partner? Use linking cubes to measure "how long" (tall) is each student's height. Record the results. Additional Stems for 1st Grade Found at End of Document.
Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits Limit lengths and distances to whole numbers.	**Calculator Designation** **NO** – a calculator will not be available for items
DOK Ceiling: 3	
Item Format: Selected Response, Constructed Response, Technology Enhanced	

Grade 1 Mathematics

Mathematics		1.GM.C.8
GM **C** **8**	**Geometry and Measurement** **Work with time and money.** Tell and write time in hours and half-hours using analog and digital clocks.	
Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations. The student will tell and write time in hours and half-hours using analog and digital clocks, e.g., 1:00, 1:30, 2:00, etc.		**Sample Stems** What time is shown on the clock?  Additional Stems for 1st Grade Found at End of Document.
Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits No Limits.		**Calculator Designation** **NO** – a calculator will not be available for items
DOK Ceiling: 2		
Item Format: Selected Response, Constructed Response, Technology Enhanced		

Grade 1 Mathematics

Mathematics		1.GM.C.9
GM C 9	**Geometry and Measurement** **Work with time and money.** Know the value of a penny, nickel, dime and quarter.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.	**Sample Stems**
The student will know the value of the penny, nickel, dime, and quarter, e.g., a quarter is 25 cents. Note: In first grade, the focus should be on the word label rather than the cent symbol.	How much is the dime worth? Additional Stems for 1st Grade Found at End of Document.
Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits No Limits.	**Calculator Designation** **NO** – a calculator will not be available for items
DOK Ceiling: 2	
Item Format: Selected Response, Constructed Response, Technology Enhanced	

Grade 1 Mathematics

Mathematics		1.DS.A.1
DS **A** **1**	**Data and Statistics** **Represent and interpret data** Collect, organize and represent data with up to three categories.	

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will collect, organize, and represent data with up to three categories using physical object graphs, picture graphs, T-charts, and tallies.

Sample Stems

Which type of animal would you like to have as a pet, dog, cat, or rabbit?

Use this chart to collect the data from the class.

Dog	
Cat	
Rabbit	

Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

Limit to twenty items or data points.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 3

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

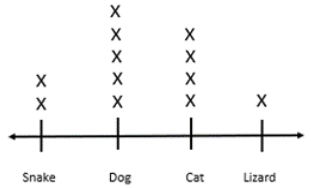
Mathematics		1.DS.A.2
DS **A** **2**	**Data and Statistics** **Represent and interpret data** Draw conclusions from object graphs, picture graphs, T-charts and tallies.	**PRIORITY STANDARD**

Expectation Unwrapped – the intent of this section is to describe the elements of the expectation, but are NOT additional standards or expectations.

The student will draw conclusions, e.g., make a decision or answer a question, from given or student created object graphs, picture graphs, T-charts, and tallies.

Sample Stems

What does the information in this graph tell us?



Additional Stems for 1st Grade Found at End of Document.

Suggested Local Assessment Content Limits/Boundaries - Classroom Work Should Extend Beyond These Limits

Limit to twenty items or data points.

Calculator Designation

NO – a calculator will not be available for items

DOK Ceiling: 3

Item Format: Selected Response, Constructed Response, Technology Enhanced

Grade 1 Mathematics

Code	Sample Stem	Explanation
1.NS.A.1	Start at 27 and count until I ask you to stop.	This is a good way to check student understanding at the beginning of the year. Watch for the transitions between decades. For example, do students move easily from 39 to 40 or do they become confused? If you ask a student to start at 29 do they have to make a running start from 1 until they reach 29 and then continue? Does the student reach a point and then begin over -- for example do they count 27, 28, 29 20, 21, 22?
1.NS.A.2	Place several items on a tray or table. Have students count the items, and then write the numeral represented.	At times during the year, students may have difficulty with numbers with which they have had little experience. Kindergartners are expected to be able to count items to 20 but it may be later in the year before they can count to larger numbers. Provide a 120 chart as they begin representing these larger numbers and recheck throughout the year to determine if this skill is becoming more automatic.
1.NS.A.3	Hold up a number card (numeral identification) or say, "Start at 16 and count back until I say Stop."	Because this is difficult for some students, students might do this activity as a group chant. Warn them it is not a "blastoff countdown" if that is not part of what is expected.
1.NS.A.4	Have students sit in a circle. Ask one child to start counting. Continue counting around the circle by 5s until children reach the desired stopping place. "Start at 15 and count to 70."	Students need to listen carefully to participate in this activity. Providing an ending number encourages thinking of number order.
	What is another name for a bundle of 10 ones?	Use ten individual linking cubes. Hook them together and compare to the tens rods. Lead students to connect the tens rods and the linking cubes and to use "a ten" to describe.
1.NBT.A.1	Create 10 sticks. Glue 10 large lima beans to a tongue depressor. Teacher action: Place in a bag or container with some extra "ones" for use in classroom activities.	For students needing a more concrete way to connect ten items to a "ten", Most students quickly make the connection between the math tools and "tens". For those that don't, this makes it more concrete and helps the students make connections.

Grade 1 Mathematics

Code	Sample Stem	Explanation
1.NBT.A.2	James says that 54 is made of 5 tens and 4 ones. Matt says it is made of 4 tens and 14 ones. Shawn says they are both correct. Who do you agree with? Explain your thinking.	
	Put 2 tens and 5 ones on display where students can see it. Write the number you created on their whiteboard.	Play LOTS of games. One could be "I'll Show You, You Show Me". Quickly scan the room and then set up another number. Another day, write only the NUMBER on the teacher display and tell students, "Show me the tens and ones that make this number."
	What is six tens and 5 ones? OR "Show me 53 using manipulatives."	
1.NBT.A.3	Harmony says that 54 and 45 are equal because they are both made with a 5 and 4. Do you agree with her? Why or why not?	
	Which number is larger - 71 or 17? How can you prove it?	Have students use their tens and ones counters to "prove" which number is larger by recognizing which number has more tens. Students may also use a hundreds chart to locate the numbers. Any numbers can be used by special attention should be paid to the teen numbers as young students may reverse 18 and confuse it with 81, for example.
1.NBT.A.4	Have students sit in a circle. Ask one child to start counting. Continue counting around the circle by 10s until children reach the desired stopping place. "Start counting at 27. Count by 10s to 117."	
	Start counting from 13 and count by tens to 93.	
1.NBT.B.5	Show a way to add 34 and 18?	Do a number talk to discover ways students add two-digit numbers. Discuss what students like best. Listen to ensure they are understanding how to do this type of addition.
1.NBT.B.6	What is 10 less than 27? What is 10 more than 56? How can you do this without counting?	
	What is 10 more than 43? What is 10 less than 78? Can you do this without counting?	

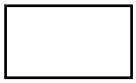
Grade 1 Mathematics

Code	Sample Stem	Explanation
1.NBT.B.7	How can you add 37+40 using models, drawings, or manipulatives?	
	What is 30 + 58? Support your answer by using words, numbers, or models.	
1.RA.A.1	Find two numbers that will make a sum of 14 and using the same two numbers you can get a difference of 6	Have students use manipulatives, e.g. cubes, marker, ten frames to explore different combinations for a sum of 14 and look for pattern where their difference would be 6.
	Mike has 11 baseball cards. Jen has 5 baseball cards. How many more cards does Mike have than Jen? The 1st grade class had a plant in their room. It was 14 inches tall when they got it. It has grown 4 inches. How tall is their plant now?	
	Tia is solving the equation 19 – 11 = ?. She says her strategy is to think about the problem and change it to 19 – 10 which equals 9, and then she takes one more away to get an answer of 8. What different strategy would you use to find 19 – 11 = ?	
1.RA.A.2	There were 6 goldfish in the tank. Three red fish came out of the rock cave. Five blue fish were hiding in the plant. How many fish were in the tank?	Give children lots of opportunities to work with concrete, pictorial, and abstract representations by using favorite books to develop problems for them to solve.
1.RA.A.3	Which equation(s) are true and which equation(s) are false? 6 = 6 4 + 1 = 5 + 2 7 = 8 – 1 5 + 2 = 2 + 5 7 + 2 = 9	
	Place the correct operation or equal sign in the circle to make the math sentence true. 6 ◯ 3 = 9 12 + 4 ◯ 16 10 ◯ 4 = 6	How can students find the missing numbers in these equations? What makes sense to them? Some may add in a subtraction problem or subtract in an addition problem. Listen to them explain their thinking.
	Given the numbers 2, 5, and 3, make a number sentence that is true.	

Grade 1 Mathematics

Code	Sample Stem	Explanation
1.RA.A.4	Find the number which makes each of the following equations true. 14 - ◯ = 9 7 + ◯ = 11 13 - 4 = ◯	How can students find the missing numbers in these equations? What makes sense to them? Some may add in a subtraction problem or subtract in an addition problem. Listen to them explain their thinking.
1.RA.B.5	When adding 3+5+7, Nevaeh added 3+7 first to make 10, then added 5 more. Jose said you have to add the numbers in order, so he did 3+5 equals 8, plus 7 more to get 13. Who is correct? Which way would you add the 3 numbers?	
	If 3 + 4 = 7 then what does 4 + 3 =?	Students should hear the word "commutative" but should not be expected to use it. Again, lots of examples are needed for many students to develop understanding of this property.
1.RA.B.6	How can you use what you know about addition to help you solve this subtraction problem? 15-9= ?	
	List the patterns you see in the following pairs of equations. $10 + 7 = 17$ $17 - 10 = 7$ $8 + 5 = 13$ $13 - 5 = 8$ $6 + 9 = 15$ $15 - 9 = 6$ $8 + 3 = 11$ $11 - 8 = 3$	Each row of equations is a pair to investigate patterns, e.g., $10 + 7 = 17$ $17 - 10 = 7$
	Jenni put 9 flowers in the vase. Five were purple. How many were white?	
	Lila caught 14 insects that were butterflies and ladybugs. 7 were butterflies. How many were ladybugs?	
1.RA.C.7	Find two numbers to make a sum of 14. Find two numbers to make a difference of 6.	Provide children with the opportunity to play with and experience adding and subtracting within 20. Give them support. Use contexts that allow them to create pictures in their minds. Do not be concerned with speed. They need LOTS of tie to develop understanding rather than memorization of addition and subtraction facts.

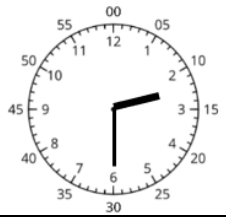
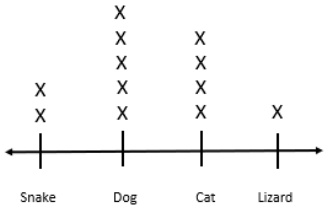
Grade 1 Mathematics

Code	Sample Stem	Explanation
1.RA.C.8	In pairs, you will each draw two cards from your stack. The person with the highest sum wins that round and gets all 4 cards. Continue to play until one person has the whole stack. Teacher action: provide each student with a set of numeral cards with each student beginning with the same number of cards. Have each student place their cards in a pile, face-down in front of them.	Play games, like Compare, that require students to add/or subtract. Observe how they reach an answer. Do they use their fingers or manipulatives? Do they count on? Do they count the pips on dominoes or die? Do they count mentally? Do they appear to automatically solve? The ultimate focus will be developing fluency strategies.
1.GM.A.1	If we took away one side on the rectangle shown below, could we still call it a rectangle? Why or why not? 	This activity should be used after discussing triangles and rectangles. Some young students relate shapes to pattern blocks. For example, a triangle may only be considered a triangle when it is green. Discussions and explorations will allow the children to identify misconceptions and the teacher can then help students explore the attributes that identify the various shapes found in their world.
	Would two more angles on a triangle still give us a triangle? 	Other possible questions to explore: What if the green triangle was painted blue? Would it still be a triangle? How do you know? What if we could wave a wand and make it your favorite color? Would it be a triangle now?
1.GM.A.2	Using pattern blocks, which shape, or shapes could you use to make a whole hexagon? How many ways can you make a hexagon?	Students should have access to pattern blocks, cut out shapes in the pattern block form, or other manipulatives (including virtual).
1.GM.A.3	Follow your teacher on a shape walk. Observe an identified shape from multiple perspectives, e.g., lying under it, moving around it. Draw what you see from various perspectives.	Parks are great places to do this as they can observe a slide from the top, underneath, from the side or even from on the slide. Or a tire swing. A teeter-totter. Whatever is available.
	Look at the identified item from different perspectives. How does a pencil look from above? From one end? From the other end? Teacher action: select various items within your classroom.	Use geometric solids that you have in your room. Any objects are interesting and can provide great discussion. Consider part-part-whole. What 2 D shapes make up the pencil.

Grade 1 Mathematics

Code	Sample Stem	Explanation
1.GM.A.4	Using the modeling clay provided, create a pizza or cookie shape. With a craft stick, "cut" the shape in half. Notice how their halves appear. Are the pieces basically equal? Describe how you believe they are equal. Other possible actions and questions might include: cut shape into fourths. What is something important to remember when you determine half? Why should the pieces be as equal as possible? How can they check their sizes? (Lay one half on top of the other to compare.)	This activity is fun and promotes discussion of what "half" and "fourths" are. Do NOT use numerical representations (1/2, 1/4) as students are not ready for those. Instead, just use the language of fractions. Numerical representations will be used first in third grade. Have them sculpt a variety of shapes and try to determine half or fourth. Create a cookie that is small and one that is large and find half of each. Then have the discussion as to whether the two halves are equal and then why? or why not? This is to begin developing basic understandings of fractions.
1.GM.B.5	Using the three items provided by your teacher, arrange them in order from shortest to longest. How did you decide which was shortest? Take the longest item and find two other items to compare. What strategy did you use to decide which item was shortest and which was longest? If the items fit, sketch them on a sheet of paper.	Give or identify 3 items for each student to compare. If the items will fit, provide paper for them to sketch the order. While this is fun, it also gives them an opportunity to use common terms to refer to measurement concepts. Students might also be given the same object to use for comparisons (i.e., a ten stick) and work to determine who can find each item most quickly.
1.GM.B.6	With a partner, use a paper clip to compare who has the longer pencil. Who has the shorter pencil?	Instead of a paper clip, an index card or some other tool could be used. Other options: Lay two pencils on the table. Add a third pencil and ask students which of the original pencils is longer? Shorter? Have them explain their thinking using the third pencil as their measuring tool. Replicate this measurement style with various objects.
1.GM.B.7	Working in partners, how many cubes long (tall) is each partner? Use linking cubes to measure "how long" (tall) is each student's height. Record the results.	Once students learn how to measure, they love to measure everything. Leave some tools out for them to use. If they ask you "How much did my plant grow?", challenge them to find out and observe the tools they use. If they want to know how much snow is outside your room, allow two or three students to find out! Give students every opportunity to measure whatever they are curious about (with safety always in mind).

Grade 1 Mathematics

Code	Sample Stem	Explanation
1.GM.C.8	What time is shown on the clock?  	Show students a clock and ask them to tell the time they see. Give them a time and encourage them to write the time correctly.
1.GM.C.9	How much is the dime worth?	Discuss each of the coins as the year progresses. Begin to mix the presentation (i.e., dime on Monday, nickel on Tuesday, quarter on Wednesday, etc.) Give each child multiple opportunities to tell the value of the various coins.
1.DS.A.1	Which type of animal would you like to have as a pet, dog, cat, or rabbit? Use this chart to collect the data from the class. Dog | Cat | Rabbit |	Let children determine the question after you have modeled setting up several graphs. Provide an area or poster paper in which to collect their data. Discuss possible categories and label for three areas. Then collect and post the data. Discuss what they have discovered based on the completed graph.
1.DS.A.2	What does the information in this graph tell us?  	For example, provide students with a completed graph. Ask them questions based on the graph. Which category was most popular? Which area had the least votes? How many people voted?